

NAVAL POSTGRADUATE SCHOOL

Monterey, California



THESIS

**EVALUATION OF DIRECTLY SUBSIDIZING
COMMERCIAL SUPERMARKET DISCOUNTS AS
AN ALTERNATIVE TO PROVIDING CONUS
COMMISSARIES**

by

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December 1998

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CONUS COMMISSARIES**

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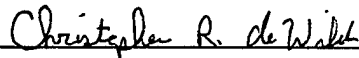
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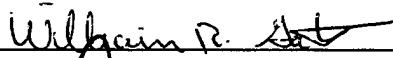
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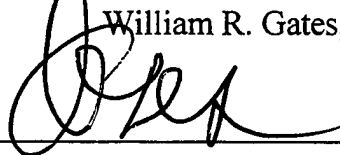


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ABSTRACT

Congress over the years has debated the merits of having the Defense Commissary Agency (DeCA) operate commissaries. In 1997, the Congressional Budget Office (CBO) produced a study that evaluated the costs and benefits of retail activities, exchanges and commissaries, at military bases and recommended four alternatives for Department of Defense (DoD) to consider for improving operation of its retail activities. This thesis examines the feasibility of an additional alternative: to replace Continental United States (CONUS) commissaries by subsidizing commercial supermarkets for discounts provided to eligible service-members. To evaluate the feasibility of this alternative, the potential funding available was compared to the potential costs. The potential funding would come from the reduction in DeCA's annual appropriation resulting from eliminating CONUS commissaries. The potential costs include the cost of subsidization. Estimates of subsidization costs were based on data for grocery expenditures, range of family sizes, amount of discount offered to eligible service-members, and the portion of the discount subsidized by the government. The analysis reveals that the feasibility of this alternative depends significantly on the subsidy policies DoD may choose to adopt.

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I. INTRODUCTION

A. BACKGROUND

The central purpose of the Department of Defense (DoD) is to conduct effective military operations in pursuit of America's National Security Strategy. In order to accomplish this purpose, DoD should concentrate on its core missions, outsource activities that can be performed more efficiently in the private sector, and reengineer support activities that remain in the government.

DoD, faced with constrained budgetary resources, is reducing its infrastructure to free funds to replace aging weapon systems. DoD's operation of on base retail activities, mainly the Commissaries and Exchanges, is one area receiving close scrutiny. The fact that the Commissaries receive approximately one billion dollars in appropriated funds each year ensures a continuous debate in Congress over their operation by DoD.

The Congressional Budget Office (CBO) released a study in October of 1997 that analyzed "The Costs and Benefits of Retail Activities at Military Bases." The CBO Study described four potential alternatives:

Alternative #1: Follow DoD's Current Plan

DoD is planning to maintain the size, scope, and pricing policies of its Commissaries while reducing the cost of operating them. This would be accomplished by pursuing waivers and legislation that would free the commissaries from some of the legal and policy constraints that limit their ability to control costs. One of the key points is that the Defense Commissary Agency (DeCA) employees are members of the federal civil service. This makes the employees subject to the civil service rules on hiring, pay, promotion, and retirement. The result is that the employees, many of whom are cashiers, receive salaries that are approximately one and a half times higher than their commercial counterparts. Easing these constraints would allow the commissaries to operate more like nonappropriated-fund (NAF) activities.

Alternative #2: Create a DoD Resale Authority

The second alternative is to combine DeCA and the Exchange systems into a single NAF-like organization called the Resale Authority. The combined Resale Authority would provide DoD savings by sharing distribution, warehouse, transportation, personnel, and information systems. This alternative could eliminate the need for appropriations if the Resale Authority charged Exchange prices for all of its

goods. Charging the higher Exchange prices on Commissary goods would reduce the nonpay benefits service-members currently receive from the Commissaries.

Alternative #3: Rely on Private Contractors

This alternative would require DoD to use contractors for all on-base retail activities (Commissaries and Exchanges). Contracting out retail activities would allow DoD to concentrate on its core missions instead of the retail business, free DeCA from civil service constraints, and introduce competition that could have a dramatic effect on costs.

Alternative #4: Revise Incentives for DoD's Retail Activities

This alternative would require DoD to pay the full cost of its in-house retail activities, including taxes and return on capital. Facing the full cost of its retail program, DoD would most likely limit the size and scope of its retail system to the point where the costs of additional activities were balanced by the benefits provided.

The CBO Study emphasized the need to improve DoD's retail operations. The alternatives presented in the CBO Study are not an exhaustive list.

B. ANOTHER ALTERNATIVE

Another alternative for consideration is closing all the commissaries in the Continental United States (CONUS), except at isolated bases (i.e. no commercial supermarkets nearby), and entering into agreements with the local commercial supermarkets to provide discounts to eligible service-members. The agreements reached with the supermarkets could range from no subsidization to a dollar-for-dollar subsidization by the government on the discount service-members receive. If the government were to subsidize the discounts offered by the supermarkets, DoD would have the option of limiting the total amount of savings each individual could receive. Also, due to the more extensive range of products that supermarkets offer compared to the commissaries, DoD could limit the range of products that would be eligible for the discount. Consideration could also be given to limit the subsidization to basic essentials like milk, eggs, and cereals.

Current "Smart Card" technology available at supermarkets, like Lucky and Safeway, provides a convenient means to track and record the total savings received on an individual basis. Before this alternative could be adopted, it must provide substantial savings to the government and provide an acceptable alternative to the eligible members.

C. PURPOSE AND SCOPE OF THESIS

This thesis will evaluate the feasibility of contracting with commercial supermarkets to provide discounts to eligible service-members. This objective will be accomplished by:

- Examining the willingness of commercial supermarkets to offer this type of service.
- Evaluating the applicability of current "Smart Card" technology in use at commercial supermarkets.
- Analyzing methods to control the amount of subsidization.
- Comparing estimated costs to current appropriations.
- Discussing the potential advantages and disadvantages of this alternative.

This research will draw on the Smart Base pilot project in Pascagoula, Mississippi. The experiment uses local supermarkets to offer a discount to eligible service members. The background, arrangements, and results of the Smart Base test will be discussed.

Chapter II will provide a history of the Commissaries, describing their evolution from a sutler system to today's military grocery store. The origins and organizational structure of DeCA will be described as well.

Chapter III will examine commercial supermarkets. The Commissaries and commercial supermarkets will be compared. The pilot project at Naval Station Pascagoula will be used

as a baseline to demonstrate the willingness of commercial supermarkets to enter into this type of agreement.

Chapter IV will evaluate the scope of subsidization that this alternative could create. The concept of "selective subsidization" will be defined and a potential implementation method discussed. A model will be developed to compare potential costs against DeCA's current annual appropriations. The development of "Smart Card" technology to support this alternative will be briefly evaluated.

Chapter V will examine DoD's potential advantages and disadvantages from this alternative. DeCA's rationale for keeping the commissaries will be discussed and debated.

Chapter VI will summarize the results of this thesis. Areas that will require more detailed analysis will be discussed.

II. HISTORY AND FUNCTION OF THE COMMISSARY

A. HISTORY

1. Beginnings to World War II

Although the Defense Commissary Agency (DeCA) was only established in 1990, its mission dates back to the American Revolution. With the formation of the Continental Army, Congress established a Commissary General of Stores and Provisions to provide for the Army's subsistence. This system contracted with civilian suppliers to deliver and distribute provisions to the Army. The failure of this policy was responsible for the nearly disastrous winters at Valley Forge and Morristown. [Ref.1:p.80]

In 1791, government officials and military commanders issued licenses to sutlers (civilian merchants) to sell non-ration items to the troops. These sutlers quickly developed a reputation for selling the troops inferior goods at exorbitant prices. By 1826, the Army sold goods from commissary storehouses directly to officers posted at specific locations, particularly remote posts. These goods were sold to the officers at wholesale prices plus transportation costs. In 1835, Congress made the Subsistence Department permanent. Six years later, the Army allowed the officers to purchase these goods for their families. [Ref.1:p.80]

On July 28, 1866, Congress passed legislation that abolished sutlers and allowed both officers and enlisted to purchase goods at cost from the commissary storehouses. This legislation did not restrict the geographical location of the stores. Specifically, it did not limit this practice to remote posts. On July 1, 1867, the first sales commissary began operating at Fort Delaware, DE. Shortly after, all the Army subsistence warehouses doubled as sales commissaries. [Ref.2:p.7]

In 1879, Congress legislated a ten percent surcharge on all commissary items, except tobacco, to help pay for spoilage and transportation costs. The ten-percent surcharge only stayed in effect for five years. This same legislation also authorized retired officers, who received permission from the local commander, to purchase goods at cost from the sales commissaries. Later in 1879, this privilege was also extended to civilian Army employees at remote posts. The only stipulation was that the civilians had to pay cash for their purchases. In 1881, Army regulations expanded this privilege to family members. The regulations stated that an Army officer could designate a family member to make subsistence purchases during his absence. [Ref.2:p.9]

The expansion of the sales commissaries overseas was initiated by the acquisition of overseas territory during the Spanish-American War. On April 9, 1898, an overseas grocery list was established for the sales commissaries. On

October 1, 1900, the first permanent overseas sales commissary was established at Manila in the Phillipine Islands.[Ref.2:p.9]

In 1908, the Navy's canteen system and "Bum boats" (similar to the Army's sutlers) were proven inadequate by the voyages of the "Great White Fleet." The Naval Appropriations Act of 1909 provided for Navy Ships' Stores and Commissaries and Marine Corp Commissaries. The first Marine Corp Commissary was established in 1909. The following year, the first Navy Commissary was established at the Washington, D.C., Navy Yard.[Ref.2:pp.9,10]

The Appropriations Act of 1916, referring back to the earlier Army Regulation, permitted the sale of commissary supplies to active duty or retired enlisted personnel. In 1926, the Army allowed officers, warrant officers, and enlisted members of the Officers Reserve Corps, Enlisted Reserve Corps, National Guard, and National Guard Reserve to purchase goods at Commissaries while they were attending service schools, while on maneuvers with the regular Army, and while in a camp at a station where such sales were being made. Purchases were only allowed for eligible personnel and their immediate family. This privilege was also extended to lighthouse keepers and crews of lightships. In 1937, the Navy extended commissary privileges to both officers and enlisted men of the Coast Guard and to the widows of Navy, Marine Corp, and Coast Guard officers and enlisted men. In

1938, the concept of "self-service" operations was introduced in commissaries. [Ref.1:pp.80,81]

2. World War II to Establishment of DeCA

The commissaries underwent unprecedented growth along with the growth of the services during World War II. The commissaries and exchanges often shared facilities during the war. This overlap led to confusion about their different functions and soon they were referred to as one and the same. [Ref.1:p.81]

The growth of the commissaries and exchanges also brought closer scrutiny from Congress. In 1949, the House of Representatives established the House Armed Service Committee's Special Subcommittee on Resale Activities of the Armed Forces (also referred to as the Special Subcommittee on Exchanges and Commissaries, or the Philbin Committee). The Subcommittee's role was to investigate Post Exchanges, Quartermaster Sales Stores, Ship's Service Stores, Commissaries, and other pertinent or related activities within the Armed Forces. [Ref.2:p.13]

The Subcommittee's report concluded the following:

- that commissaries and exchanges were actively and unfairly competing with established private business,
- that many commissaries were being operated in close proximity to adequate commercial facilities which were conveniently available at reasonable prices,

- that it would be desirable to have constant regulations governing exchange and commissary activities, since wide variation existed in current regulations, and
- there was inequity between the services concerning who was eligible to shop at exchanges and commissaries. [Ref.2:p.14]

The subcommittee singled out the exchanges for most of its criticisms. They recommended that the price differential between the exchanges and retail businesses be narrowed by including in the cost of the exchange operations all utilities, maintenance, and equipment. The Subcommittee also recommended that all services refer to their service stores and exchanges as "exchanges," that regulations be standardized, and that the exchanges generate profits for recreation and welfare funds. [Ref.2:p.14]

The Subcommittee did not believe that the primary purpose of the exchanges was to generate profits for the recreation and welfare fund. Rather, the Subcommittee's report made it very clear that the sole justification for maintaining and operating exchanges and commissaries was the convenience and morale of military members and their families. [Ref.2:p15]

On October 1, 1949, as a result of the Subcommittee's recommendations, the Armed Services Commissary Store Regulation (ASCSR) was instituted. The ASCSR standardized the stock list, terminology, and other criteria for all of

the Armed Services' commissaries. The ASCSR also specified the qualifications for eligible commissary patrons. The regulation also specified that commissaries would not be authorized in areas where adequate commercial facilities were conveniently available and sold commissary merchandise at reasonable prices. The terms "conveniently located" and "reasonably priced" were, and continue to be, open to interpretation. [Ref.2:p.15]

With the FY 1952 Department of Defense Appropriations Act, Congress required commissaries to become self-sustaining in purchasing and maintaining equipment and supplies. To do this, Congress established a surcharge on goods sold at commissaries, initially set at two percent, to commence on 1 January 1952. The surcharge paid for operating equipment, supplies, utilities, merchandise losses and spoilage. The commissary customers were responsible for paying the cost of the merchandise (purchase price plus transportation costs). The remaining costs not paid for by the customer or the surcharge were borne by the military departments. These costs included pay and allowances for employees, facilities (including store rental), procurement, inspection, receiving, warehousing, disbursing, accounting, and other administrative functions. [Ref.2:pp.15,16]

In 1963, excess surcharge funds were authorized to be used for construction and remodeling costs. These costs now comprise the second largest share of the surcharge

collection at 29%. The largest share goes toward operating expenses, followed by construction, automated data processing (ADP) systems, utilities, and equipment. [Ref.2:p.19]

The surcharge rates continued to increase over the years, with the specific rates varying by service. In 1974, Congress increased the surcharge to three percent. In 1976, the Navy and Marine Corps used a variable surcharge rate that averaged six percent. At the same time, the Army and Air Force surcharge rates were four percent. In 1983, the Secretary of Defense put an end to the variation in surcharge rates between the services by setting the rate at five percent. [Ref.1:p.82]

The issues of privatization, competition, and true costs have been reviewed by different commissions during a 40-year period starting in 1956. Yet, there were no major changes to the foundation for today's commissaries, that was laid in 1952, until the services' commissary systems were consolidated on the recommendation of the Jones Commission in 1989. [Ref.1:p.82]

This recommendation had been previously forwarded in a DoD Comptroller General Study to improve commissary operations. A 1980 General Accounting Office (GAO) report also recommended consolidating the service commissary systems into a single agency. [Ref.1:p.82]

3. Establishment of DeCA to Present

On May 15, 1990, DoD announced the Defense Commissary Agency would be formed to consolidate the services' commissary systems. To assist in the transition, a DeCA transition team was established in July 1990. One of the first actions of this team was to select Fort Lee, VA as the site for the new headquarters. On November 9, 1990, DeCA was established by DoD Directive 5105.55. On October 1, 1991, DeCA was officially activated; Army Major General John Dreska was named the first director. [Ref.1:p.83]

DeCA's first major problem, due to consolidation into one agency, was its bill paying system. In the winter of 1991-92, this problem ballooned to \$403 million of unpaid bills. Making this problem a short-term priority, the backlog of unpaid bills was down to \$33 million by November 1992. At that point, DeCA's Director declared the problem solved and under control. [Ref.1:p.83]

On November 30, 1992, Army Major General Richard E. Beale, Jr. became the new DeCA Director. Since his tenure began, DeCA's headquarters has been reorganized and the number of military employees has been significantly reduced. In December 1995, DeCA received the Hammer Award, recognizing the agency for significantly reinventing government processes. [Ref.1:p.83]

On December 5, 1995, the Defense Science Board contracted with Coopers & Librand to conduct a "broad brush" study on privatizing the commissaries. This study recommended that the commissaries be privatized. On December 21, DeCA's director briefed the Defense Science Board about the agency's stand on privatizing the commissaries by making the following points: [Ref.4;pp.40-41]

- DeCA had already privatized many functions.
- DeCA had accomplished a great deal without total privatization.
- DeCA was the clear leader, when compared to civilian supermarkets, in customer savings and reducing costs.

The privatization issue continued to gain momentum. On January 24, 1996, the chairman of the House Budget Committee, Rep. John Kasich (R-Ohio), asked the CBO to conduct a "comprehensive review of nonappropriated fund and resale activities by the DoD." Specifically, Mr. Kasich wanted CBO to address costs, benefits, and whether there were "less costly alternatives" to the existing system that could "provide the same level of benefit." [Ref.4;p.41]

In March 1996, DeCA was one of several government agencies nominated to become a performance-based organization (PBO) as part of Vice President Gore's effort to reinvent government. On October 1, DeCA officially became the only transitional PBO agency in DoD. [Ref.4;p.43]

On October 29, 1997, DeCA, the Army and Air Force Exchange Service, and the Navy Exchange Command signed a memorandum of agreement to raise the price of cigarettes sold in the commissaries by 20-30 percent. On November 1, a DoD directive mandated that DeCA sell cigarettes at exchange prices. This policy only affected bases where commissaries already sold cigarettes. [Ref.4;p.43]

B. DECA ORGANIZATION

DeCA oversees the operation of the worldwide commissary system from its headquarters in Fort Lee, VA. To manage and operate the 298 commissaries worldwide, DeCA employs 17,000 people. DeCA's total sales in FY 1997 were \$5.1 billion, making it the ninth largest grocery chain in the United States. [Ref.3:p.1]

Figure 2.1 shows DeCA's current organizational chart. The Command Section directs all of DeCA's activities. The Command Section includes the Director (normally a two-star general officer), Chief Executive Officer, Chief of Staff, Aide-de-Camp, Senior Enlisted Advisor, and all administrative support. DeCA falls under the Undersecretary of Defense (Personnel and Readiness). [Ref.1:p.5]

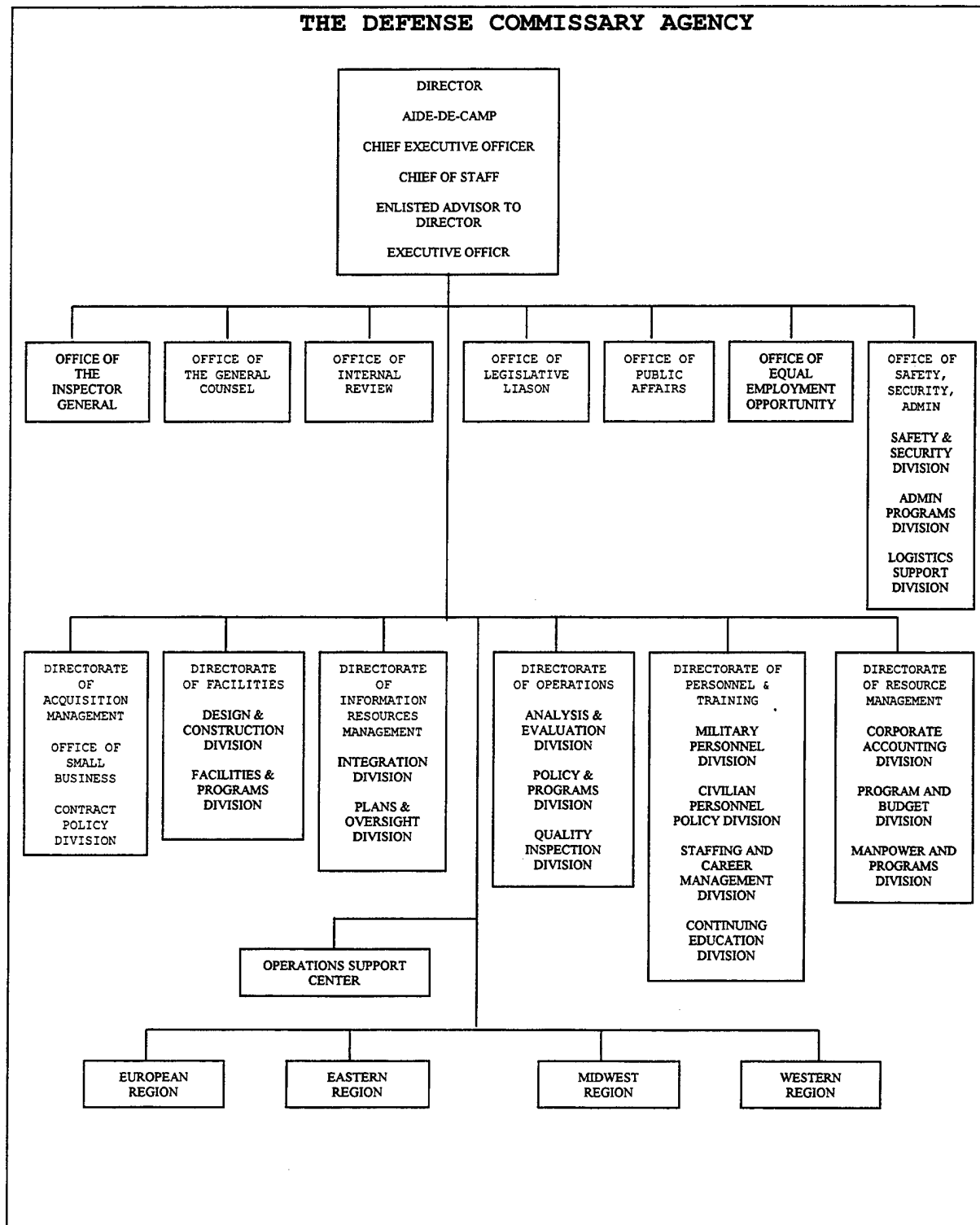


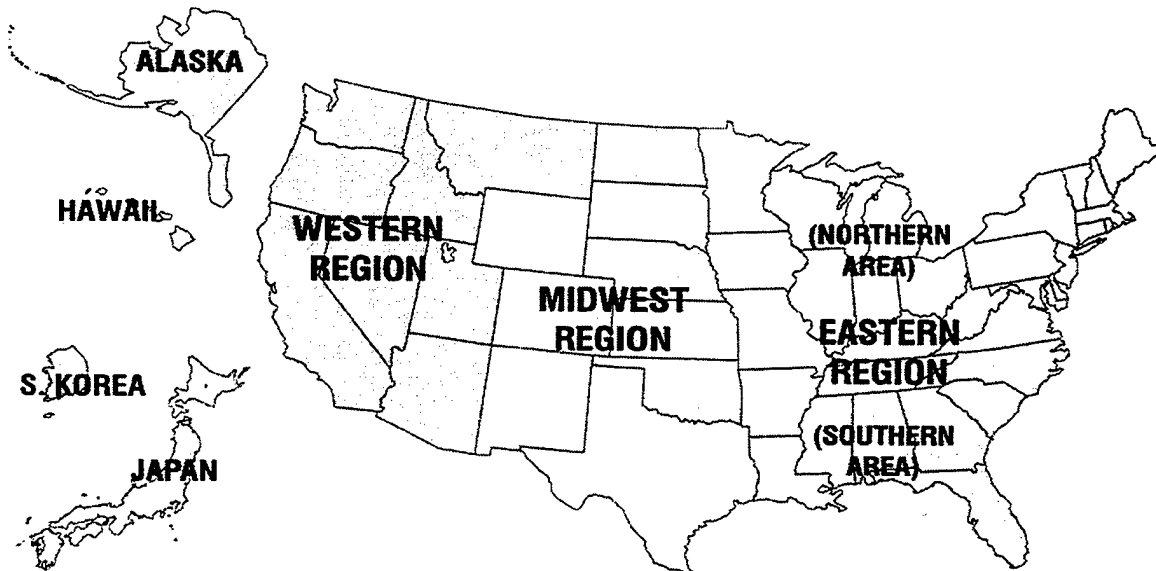
Figure 2.1. Defense Commissary Agency Organization Chart.

There are currently six Functional Directorates. The Directorate of Facilities develops and implements facilities policies and programs. The Resource Management Directorate develops policy, procedures, and plans for commissary financial and accounting matters, administers funding authority, analyzes financial reports, and ensures the fiscal accounts' integrity. The Directorate of Operations develops, establishes, directs and implements the commissaries' operating policies, procedures, and programs. The Personnel and Training Directorate plans and directs civilian and military training and development programs for the agency. The Directorate of Information Resource Management provides program management, planning, and support for automation, telecommunications, and other automation-related functions that speed the flow of information among decision-makers. The Acquisition Management Directorate manages DeCA's worldwide acquisition program for procuring commissary resale items, operational equipment, supplies and services, and agency support requirements. [Ref.1:pp.5,6]

The Operations Support Center responds to the operational and support needs of the agency's regions, zone managers, commissaries, and other associated facilities worldwide.

This worldwide commissary system is divided into four regions. Figure 2.2 shows DeCA's regions. The regional headquarters provide technical advice, assistance, training and direction to commissaries located in their regions. Regional Directors report directly to DeCA's CEO. The regions are divided into zones and districts for localized management support. Zone managers report to their respective regions. Stores work directly through zone managers within their regions, or through the Operations Support Center. [Ref.1:p.6]

MAP OF DECA REGIONS



EUROPEAN REGION

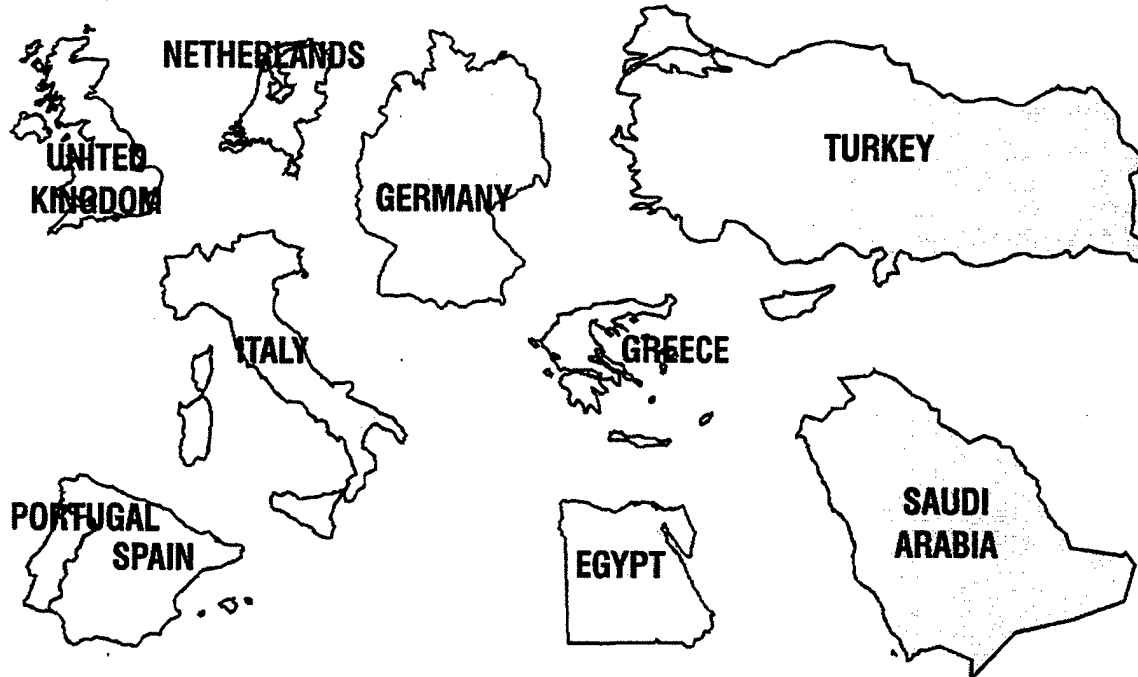


Figure 2.2. Defense Commissary Agency Regions

C. SUMMARY

This chapter has provided a brief history of the commissaries and their consolidation under the cognizance of the Defense Commissary Agency. Commissaries have evolved from commissary sales stores, which were little more than warehouses with a table or counter, to the modern grocery stores of today.

Chapter III will examine the commercial supermarket industry. Commissaries and commercial supermarkets will be compared. The Pilot Project at Naval Station Pascagoula will be discussed and used to illustrate the willingness of commercial supermarkets to provide service-members a discount.

III. COMMERCIAL SUPERMARKETS

This chapter will briefly examine the grocery industry's development from specialized stores to today's supermarkets. It will describe the fierce competition in the grocery industry. Competition requires grocery stores to operate efficiently and provide other conveniences to attract customers. Then the commissaries and supermarkets will be compared to illustrate key differences. Lastly, the pilot project at the Naval Station Pascagoula will be described. Several observations from the pilot project that concern the discount required to maintain service-members utility will be discussed.

A. SUPERMARKET INDUSTRY BACKGROUND

Early food stores typically specialized in one type of item. Customers would often stroll down Main Street and purchase produce at one store and meat at another. By the 1930's, the concept of value and variety under one roof had become well established. Kroger, the number one United States supermarket chain today, started in 1883 and grew to forty stores by 1902.[Ref.5:p.1] Now supermarkets not only offer over 22,000 different items to their customers, but they also provide a variety of "convenience" services inside their stores, from banking to driver's license tag renewal. Although the grocery industry operates on some of the

smallest profit margins, typically around one percent, the 127,000 United States grocers had retail sales of \$436 billion in 1997.[Ref.6:p.3]

Grocery stores are retail stores that sell a line of dry groceries, canned goods, nonfood items, and perishable items. In contrast, a supermarket is a large, self-service grocery store with full product lines and at least 2 million dollars in annual sales. Supermarkets, such as Lucky, Safeway, Kroger, and Albertson's, have become common household names. Presently, supermarkets represent less than twenty-five percent of all the grocery stores but account for almost seventy-five percent of total grocery sales. Supermarket chains (eleven or more locations) contribute nearly sixty percent of the total sales.[Ref.6:p.4] The rise of these large, national chains, along with the expansion of the convenience stores, has absorbed or pushed out many of the mom-and-pop grocery stores.

Membership warehouse clubs, such as Costco and Wal-Mart's Sam's Club, are another growing segment of the grocery industry. These warehouse clubs offer items in bulk, typically at discount prices.

Grocery retailers not only compete against one another, but also against retail supercenters, like Wal-Mart, that continue to add grocery sections to their stores. As a counter to this attack, grocers have built up the nonfood sections of their stores, adding housewares and

other general merchandise. Food retailers are also selling fully prepared meals in an attempt to take business away from the restaurant industry.

Food retailers work closely with grocery wholesalers. Wholesalers buy both branded and private-label food and general merchandise from manufacturers and distribute these products to stores. As the larger grocers continue to strike more deals directly with food manufacturers, wholesalers are striving to cut costs and improve distribution efficiency. Many wholesale distributors also supply and operate their own retail outlets to increase their returns.

To combat their paper-thin margins, manufacturers, distributors, and retailers work closely together to determine the most efficient and profitable product assortment within each category. This analysis, referred to as "category management," has led grocers to expand and improve their produce departments and private-label selections to attain higher profits.

B. COMPARISON OF SUPERMARKETS AND COMMISSARIES

1. Competition

The supermarket industry in the United States is fiercely competitive. Supermarkets must operate as efficiently as possible to earn positive profits due to their very small profit margins. Supermarkets compete to attract customers and generate sales by relying on

convenient locations, long operating hours, and customer service, as much as on price. Supermarkets offer alternative store formats that provide both food and general retail merchandise (convenience stores, warehouse stores, and hypermarts). Supermarkets have the advantage of using "loss leaders" and "swing buyers." Loss leaders are products that are intentionally sold at a loss to attract customers. Swing buyers are purchasers who change brand loyalties to take advantage of a sale or promotion.

On the other hand, commissaries are only located on installations where we have a military presence. Commissaries do not compete actively with each other, or the local supermarkets, but they are in competition by virtue of shopper's behavior. Commissaries are not in the market to make a profit and do not solicit customers by advertising like the commercial supermarkets do. Also, unlike supermarkets, commissaries are restricted by law from using loss leaders to attract customers. Commissaries exist solely to provide a non-pay compensation benefit to military members, retirees, and their families.[Ref.7:p.1]

2. Accessibility

Commercial supermarkets are designed to serve the neighborhoods that surround them, typically within a two or three mile radius. In contrast, commissaries are designed to serve all the eligible personnel within the local area,

typically up to a 30 mile radius or more. Even though current and former service members value their right to shop at the commissaries, use declines with the distance patrons must travel. The CBO Report estimated that the average household of a retired service member within five miles of a commissary accounted for commissary purchases amounting to more than four times the dollar value of households located between ten and thirty miles from the commissary (\$3600 vice \$850). Commissary patrons cited the proximity of commercial supermarkets to their home as the most important reason they did not rely solely on commissaries. [Ref.8:p.11]

The next most important reason why patrons don't shop at commissaries is the accessibility provided by the longer operating hours at commercial supermarkets. A commissary sets operating hours based upon the amount of appropriated funds it receives. Unlike the commercial supermarkets, which usually operate long hours to increase their profitability, commissaries cannot stay open to maximize their sales potential. Commissaries' operating hours are set to support the optimum mix of hours for the base's demographic population. Therefore, high-volume stores, such as the one in Fort Belvoir, receive more funding for operating hours than the smaller volume commissaries.

3. Service

When compared to supermarkets, commissaries typically offer shorter hours, more crowded shopping conditions, and a more limited selection of merchandise. Presently, Congress determines the stock assortment, by major category of products, which commissaries are allowed to sell. Commissaries are prohibited from selling items such as beer, wine or greeting cards.

As mentioned before, supermarkets frequently offer other types of services to attract customers, such as floral sales, banking, pharmacies, and photo processing. Even if DoD combined its exchange and commissary retail activities (one of the alternatives mentioned earlier), its ability to offer a range of services comparable to the supermarkets' would still be limited in areas where the military population is small. Commissaries, due to their limited size and product mix, are unable to offer the same types of amenities as supermarkets.

The characteristics of commissaries and commercial supermarkets are shown in Table III.1. These characteristics are based on data from the April 1997 annual report of Progressive Grocer magazine and information provided by DeCA.

	Average Commissary	Average Supermarket
Hours Open per Week	48	132
Number of Items Stocked	9,800	23,000
Conveniences Offered (such as banking, photo processing, etc.)	NO	YES

Table III.1. Characteristics of Commissaries and Supermarkets.

C. PILOT PROJECT

1. Description

In 1997, The Navy Smart Base Project Office, along with Science Applications International Corporation (SAIC), initiated a one year pilot project with the local retail industries to voluntarily provide additional benefits to the active and retired military personnel located near the Naval Station Pascagoula, Mississippi. Service-members normally receive savings on retail items by shopping at exchanges and commissaries on military bases. However, Naval Station Pascagoula is not a traditional military base; it relies on the local community for many support services. Specifically, the station does not have family housing, childcare, a full service exchange, a gas station, or a commissary. The nearest commissary is thirty miles away at Keesler Air Force Base. As mentioned before, patrons cited the distance from commissaries as the main reason they do not rely solely on them for groceries.

This pilot program was designed to allow local military personnel to shop near their homes and still receive a discount on their food purchases at no cost to the government. In order to do this and conform to the Navy's initiative and principles for regionalization, the Jackson County Chamber of Commerce and the Navy gathered local retailers to discuss the Navy's Commissary Benefits Program. The goal was to receive comments and suggestions and to determine which retailers would be interested in entering into a partnership with the Navy to provide these beneficial services. The approach was sold as a win-win scenario for the local community. It would provide the estimated ten thousand eligible personnel the benefit of discounts and it would support participating local retailers by maintaining the purchases in the local area.

2. Current Status

Presently, two stores have entered the pilot program; several others are evaluating it for potential future participation. The two participating stores are the Food World Supermarket, which offers a five percent discount, and Family Frozen Foods, a locally owned store specializing in bulk purchasing sizes, which offers a six percent discount. The discounts offered by these stores do not match the twenty-five to thirty percent savings the commissaries

claim, but they do save the members time and provide them a reasonable and convenient alternative.

The Navy is attempting, currently unsuccessfully, to persuade Mississippi to waive its seven percent state sales tax, which would further augment the discounts offered by retail grocers. This would make the aggregate savings twelve to thirteen percent for eligible service-members in Pascagoula. These higher savings, combined with the opportunity to "shop at home," as opposed to a sixty mile roundtrip to Keesler Air Force Base, would offset the additional savings the commissary offers and further entice personnel to purchase groceries from the local community.

3. Conclusions

The Pilot Project provides service-members near the Naval Station Pascagoula a unique situation. These service-members have the following options when purchasing groceries:

- utilize the commissary at Keesler, which requires a one hour round trip
- utilize the stores participating in the pilot project to take advantage of the discounts, or
- utilize the other stores in the area that they may prefer at no discount.

Which one the service-member chooses will depend on which one they perceive provides them the most benefit. This perception, or utility, will be affected by factors such as

accessibility, service, savings, and personal preferences. One possibility is that service-members will utilize the participating stores for perishable goods, emergent needs, and nonperishable items that are on sale, while the commissary will be utilized once or twice a month to stock up on nonperishable goods. Another possibility is that utility provided by the savings at the participating stores versus the distance to the commissary will be such that the service-member will shop only at the participating stores or vice versa. No data are currently available to measure the effect, if any, the pilot project has had on the purchasing habits of service-members near Pascagoula; but it will become evident in any changes in the sales at Keesler Air Force Base commissary.

The discounts offered by stores will not be the same in every location. Stores will evaluate the utility they receive prior to determining a discount to offer. The stores in the pilot project apparently determined that a five or six percent discount was adequate, based on the fact that it increased their customer base and that the nearest commissary is thirty miles away.

D. SUMMARY

This chapter has examined the grocery industry and compared it with the commissaries. The background of the pilot project at the Naval Station Pascagoula was discussed.

The pilot project was used to show the willingness of supermarkets to provide discounts to eligible service-members.

Chapter IV will evaluate the scope of the subsidization that this alternative could create. The concept of "selective subsidization" will be defined and a potential method to implement this alternative will be discussed. A model will be developed to compare potential costs against DeCA's current annual appropriations to determine the feasibility of this alternative.

IV. ALTERNATIVE DESCRIPTION AND ANALYSIS

This chapter will evaluate the government's potential costs to subsidize all or a portion of discounts offered by commercial supermarkets. These costs will be compared to the portion of DeCA's annual appropriation that supports commissaries in CONUS. The potential to limit the total subsidization costs through "selective subsidization" will be described. Potential methods to monitor and track the Government's total subsidization costs, such as "smart card" technology, will be discussed.

A. ALTERNATIVE DESCRIPTION

The commissary's original function was to provide eligible service-members at remote posts access to products at a reasonable price. In 1949, the Armed Services Commissary Store Regulation (ASCSR) specified that commissaries would not be authorized in areas where adequate commercial facilities were both conveniently available and sold merchandise at reasonable prices.[Ref.2:p.15] With the growth of the grocery industry and efficiency born from competition, DoD should take a closer look at allowing commercial facilities to provide services while DoD focuses on its core mission.

This alternative involves working with local supermarkets to provide discounts to eligible service-

members, active duty and retired, as a replacement for commissaries in CONUS. This alternative will not apply to commissaries at either isolated bases in CONUS or overseas, as these provide service members immeasurable benefits at those locations. Furthermore, it is unlikely an acceptable commercial alternative would be available or willing to take over those commissaries. However, most military bases in CONUS are located near fairly large cities that have an abundance of both independent and chain supermarkets.

As mentioned before, the grocery industry is very competitive. Prices are reduced as stores attempt to increase sales by attracting customers. Entering into agreements with DoD would provide the industry an opportunity to benefit from the eleven million eligible service-members and their families that currently use the commissaries.

Commissaries currently claim to provide service-members a twenty-five to thirty percent savings.[Ref.3:p.1] DeCA estimates these savings by using a market basket survey approach. This approach involves comparing the price of a specific basket of goods in commissaries at a single point in time with the average price in nearby supermarkets.

CBO argues that the market basket survey overlooks the fact that customers tend to buy more of an item when it is on sale. Customers frequently stock up on nonperishable items during sales and adjust their weekly menus to take

advantage of specials on meats and produce items. These shopping patterns are automatically reflected in industry margins but are not captured in a market basket comparison. Commissary patrons benefit from the "everyday low prices" and can avoid the "cost" of shopping in multiple stores to reduce their grocery bills. Therefore, the CBO Report estimates that the actual savings the commissary provides over commercial prices is only twenty percent. [Ref.9:p.11]

Many factors, such as convenience, service, income, selection, and proximity, would have to be evaluated to determine the discount necessary to ensure service-members receive the same non-pay benefit as the commissaries provide. However, the evaluation required of these factors is beyond the scope of this thesis. For the purposes of further analysis, CBO's estimate that the commissaries provide twenty percent savings will be used.

B. NECESSARY LIMITATIONS AND POTENTIAL FUNDING AVAILABLE

To limit the scope of the analysis, this thesis will only evaluate the cost of providing discounts to active-duty personnel, even though the subsidy would apply to all eligible service-members. Active-duty personnel have been selected because the commissaries were founded to benefit this group. Therefore, the feasibility of this alternative will depend on whether or not the costs to subsidize the purchases of active-duty personnel from commercial

supermarkets are less than the current funding DeCA receives from Congress.

1. Selective Subsidization

Commissaries, unlike commercial supermarkets, do not operate to make a profit. In contrast to commercial supermarkets, commissaries are subsidized by the government via an annual appropriation. The appropriation is used to pay for labor, contract services, transportation costs, and utilities overseas. This appropriation allows the commissaries to offer goods at wholesale cost plus a five percent surcharge. The collected surcharge funds are used to pay for capital investment, utilities at CONUS stores, and to purchase supplies (such as paper bags and cash register tapes). The combination of a surcharge and an appropriation allows commissaries to operate like a working capital fund activity when it sells and buys goods. Commissaries essentially receive a dollar-for-dollar return on goods that they buy and sell. Limited appropriated funds dictate that commissaries operate shorter hours, offer fewer products, and limit eligible patrons to control costs.

These limitations, inherent in the normal operations of the commissaries to control costs, would be eliminated by closing CONUS commissaries and relying on commercial facilities. Therefore, it might be necessary to create a new DoD policy to limit the amount of subsidy the government

would provide. The policy to place these limits will be referred to as "selective subsidization."

Selective subsidization will be defined as the selection of products authorized for purchase at a discount along with the total monthly/annual savings an individual can receive. The importance of selective subsidization is threefold.

First, supermarkets would most likely require some form of compensation to offer a sufficient discount. Using the pilot project as a baseline, it appears that supermarkets would be willing to provide a modest discount, approximately five percent, at no cost to the government to increase their customer base. The exact discount that supermarkets would be willing to offer will vary from region to region. In any case, a modest discount might be unacceptable to service-members. Therefore, some form of subsidization from the government might be required to increase the discount to an acceptable level, around twenty percent for the purposes of this analysis.

Second, the average supermarket offers over two times as many products as the average commissary. This difference can be attributed to the fact that Congress limits the number and type of products commissaries offer; the limited appropriated funds also affect the quantity and diversity of sales. Providing a twenty percent discount on all products that a supermarket offers could significantly increase DoD's

potential subsidization costs. To limit this potential cost increase, a policy that limits the discount to products currently authorized for sale at commissaries could be adopted.

Third, offering unlimited savings could cause the consumers to shop impulsively. This could significantly increase the subsidization costs, making it necessary to place limits on the total savings each individual can receive on a monthly/annual basis. The amount each individual can save could be based on status (active duty or retired), rank, and number of dependents.

Another potential policy approach would be to allow the discount to apply to all items available at supermarkets. This approach would most likely allow DoD to reduce the discount that service-members would be willing to accept by increasing the range of products service-members could purchase at this discounted rate. Comparing alternative discount policies and their implications for government costs is beyond the scope of this thesis. If discounts through commercial facilities are a viable option, alternative discount policies should be examined more carefully.

2. Potential Funds for Subsidization

DeCA receives approximately one billion dollars in annual appropriations to operate the 298 commissaries

worldwide. In 1997, these commissaries generated \$5.1 billion dollars of sales. The 199 commissaries in CONUS accounted for approximately eighty-four percent of total sales. The 99 overseas commissaries accounted for the remaining sixteen percent of total sales; in contrast, overseas commissaries accounted for approximately thirty-four percent of DeCA's total costs.

It must be noted that DoD routinely includes the costs and sales of seventeen commissaries in CONUS located at isolated bases with the total sales and cost figures of the overseas commissaries. DoD defines "isolation" in this list by using access to recreational facilities rather than access to grocery stores.[Ref.9:p.28] In contrast, DeCA only identified seven of the CONUS commissaries as being located at isolated bases in 1995. DeCA's isolated commissaries reflected areas without a commercial supermarket within ten miles. According to the CBO Report, these seven commissaries account for only about one-half of one percent of all the United States commissary sales.[Ref.9:p.6]

Using the factors presented, approximately \$660 million (sixty-six percent) of the one billion dollar appropriations is attributable to non-isolated CONUS commissaries and hence could be converted for use as subsidization funds. A summary of the data used is provided in Table IV.1.

	Sales	Costs
DeCA	\$5.1 Billion (100%)	\$1 Billion (100%)
CONUS Commissaries	\$4.3 Billion (84%)	\$660 Million (66%)
Overseas Commissaries	\$0.8 Billion (16%)	\$340 Million (34%)

Table IV.1. Summary of Commissary Sales and Costs.

3. Costs Attributable to Active Duty Personnel

Given that the total costs for the CONUS commissaries is \$660 million, the next step is to determine the portion of costs attributable to CONUS active-duty personnel grocery purchases. This will be based on the estimated portion of the total commissary sales in CONUS attributable to active duty personnel.

In 1993, the CBO Report estimated that active duty personnel accounted for thirty-eight percent of the total sales in U. S. commissaries, even though they comprised forty-seven percent of the patrons. Figure 4.1 shows the 1993 distribution of commissary patrons and sales in the United States.[Ref.9:p.3] In 1995, based on changes in the number of active, retired, and reserve personnel living in the United States, CBO estimated that active-duty personnel accounted for thirty-six percent of U. S. sales. CBO estimated that active-duty personnel would only account for thirty-four percent of U. S. commissary sales by the end of the decade, based on DoD's projection of the future service-member populations.[Ref.9:p.4]

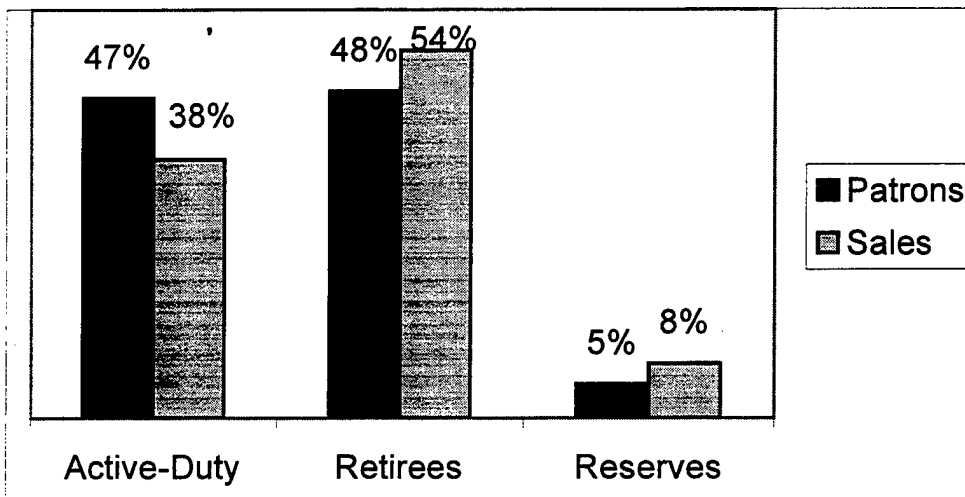


Figure 4.1. 1993 Distribution of Commissary Patrons and Sales in United States (In Percent).

DeCA does not normally track sales by type of patron. However, DeCA conducted a survey in 1997 to evaluate their customer service. The distribution of patrons in this survey was very similar to the mix of patrons from the 1993 data presented in Figure 4.1. The survey was conducted in 294 commissaries and received over 38,000 responses. The results of the patron mix are summarized in Table IV.2.

SPONSOR STATUS	RESPONSES	PERCENT
Active-Duty	18,252	48%
Retirees	16,681	43.9%
Reserve/Guard	1,237	3.3%
Other	1,840	4.8%
TOTAL	38,828	100%

Table IV.2. Summary of Patron Mix from 1997 DeCA Survey.

Although this survey was not intended to determine the patron sales mix, the mix of patrons that participated in the survey is similar enough to the earlier estimates to warrant use. It must be noted that this similarity does not mean that patron purchasing habits have not changed. However, data are not available that delineate sales by type of patron. Thus, the CBO estimate of thirty-four percent will be used to determine the portion of the total commissary costs attributable to active-duty personnel. Based on this assumption, the cost attributable to CONUS active-duty personnel is given in Table IV.3.

Total Commissary Costs	\$1.0 Billion
Total CONUS Commissary Costs	\$660 Million
Total CONUS Commissary Cost Attributable to Active-Duty Personnel	\$225 Million

Table IV.3. Summary of Commissary Costs Attributable to Active-Duty Personnel.

This result provides a target amount of \$225 million available to subsidize the savings offered by commercial supermarkets for purchases made by active-duty personnel in CONUS. The next section will evaluate potential costs to the government based on subsidizing all products purchased at commercial supermarkets.

C. ESTIMATION OF SUBSIDIZATION COSTS

The potential costs of implementing this alternative will be based on the total number of eligible personnel and their dependents, the amount these consumers spend on grocery products per year, and the portion of the supermarket discount that requires government compensation. The analysis presented here will evaluate the potential costs created by active-duty personnel assuming the government subsidizes all products they purchase at commercial supermarkets.

1. Number of Active-Duty Personnel in CONUS

Congress establishes the total number of active-duty personnel authorized in the armed forces. Currently, the armed forces consist of just over 1.4 million active-duty personnel. This number includes personnel that are stationed overseas and routinely deployed overseas. The number of active-duty personnel typically deployed overseas is approximately 250,000. [Ref.10:p.21]

Since this alternative does not eliminate commissaries at isolated bases, it is necessary to estimate the number of personnel routinely stationed at these bases. However, as described above, DoD and DeCA disagree as to what defines an isolated base in CONUS; the number of bases is somewhere between seven and seventeen. Sales at the seven DeCA commissaries accounted for only one-half of one percent of

all the United States commissary sales in 1995.[Ref.9:p.5] Even if the active-duty personnel at isolated bases accounted for one hundred percent of the sales, the total number of active-duty personnel at these bases would be small. Assuming one-half of one percent of all active-duty personnel are stationed at isolated bases would equate to approximately 7000 personnel. Based on this fact and for conservatism, the number of active-duty personnel stationed at isolated bases will be considered negligible for calculational purposes. This makes the number of active-duty personnel stationed in CONUS approximately 1.15 million. The relevant data on the number of active-duty personnel is summarized in Table IV.4.

Total Active-Duty Personnel	1.4 Million
Active-Duty Personnel Stationed Overseas	250,000
Active-Duty Personnel Stationed in CONUS (except isolated bases)	1.15 Million

Table IV.4. Distribution of Active-Duty Personnel.

2. Estimation of Active-Duty Personnel Annual Expenditures on Groceries Based on Commissary Sales

Previously, it was determined that \$4.3 billion of the commissaries' sales were generated in CONUS. This would mean that active-duty personnel accounted for approximately \$1.46 billion of the CONUS sales, assuming CBO's estimate that

active-duty account for thirty-four percent of these sales. A rough estimate of the annual expenditures per active-duty personnel is summarized in Table IV.5.

Total CONUS Sales	\$4.3 billion
Total CONUS Sales by Active-Duty Personnel (34%)	\$1.46 billion
Active-Duty Personnel Stationed in CONUS	1.15 million
Average Annual Expenditure per Active-Duty Member	\$1270

Table IV.5. Determination of Per Person Annual Commissary Expenditures for Active-Duty Personnel.

An annual expenditure at the commissaries of \$1270 equates to approximately \$106 per month per service-member.

This value needs to be adjusted to reflect equivalent expenditures at commercial supermarkets. This will be done by assuming that commissaries provide a twenty percent savings compared to commercial supermarkets and active-duty members purchase only sixty percent of their commissary-type groceries at the commissaries.[Ref.9:p.5] Table IV.6 summarizes these results.

Unadjusted Annual Spending	\$1270
Adjusted for 20% Commissary Savings	\$1587.50 ($=\$1270/0.8$)
Adjusted for Only 60% of Purchases Made at Commissaries	\$2646 ($=\$1587.50/0.6$)
Adjusted Monthly Spending	\$220 ($=\$2646/12$)

Table IV.6. Adjusted Expenditures by Active-Duty Per Person.

After making these adjustments to the annual average commissary expenditures, active-duty personnel would spend approximately \$220 per month for grocery items. The government's costs based on subsidizing either ten or twenty percent of these expenditures for all active-duty personnel stationed in CONUS is provided in Table IV.7.

	Ten Percent Subsidy	Twenty Percent Subsidy
Government's Subsidization Cost	\$304 million	\$608.5 million

Table IV.7. Potential Subsidization Costs for all Active-Duty Personnel Stationed In CONUS based on DeCA's Sales.

This monthly expenditure for active-duty at the commissaries for groceries is significantly lower than the United States Department of Agriculture (USDA) indicates in its report on the average United States cost of food at home. [Ref.11]

There are two reasons that may explain why this value is lower. First, this value assumes that all active-duty personnel in CONUS shop at the commissaries. Active-duty members may be stationed where a commissary is not available or they may prefer to forego the commissary's benefit and shop at commercial supermarkets. Second, this value is not the best estimate of the expected grocery expenditures for active-duty personnel at commercial supermarkets due to the

difference in products available between commercial supermarkets and the commissaries.

Because of these facts, data provided by the USDA will also be used to determine potential annual grocery expenditures for active-duty personnel at commercial supermarkets.

3. Estimation of Active-Duty Personnel Expenditures on Groceries Based on USDA Data

Semi-annually, the USDA reports on the average cost of food in the United States, according to family size. [Ref.9:p.95] The June 1998 data are reproduced in Table IV.8. These values are based on the 1977-78 Nationwide Food Consumption Survey data and updated to current dollars using the Consumer Price Index for specific food items. These data assume that all meals and snacks are purchased at stores and prepared at home.

The costs for individuals in Table IV.8 assume the individual is a member of a four-person family. To determine the costs for other family sizes, USDA recommends making the adjustments indicated in Table IV.9 to the sum of the values for the individuals that comprise the family.

Age-Gender Groups	MONTHLY COST			
	Thrifty Plan	Low-Cost Plan	Moderate Plan	Liberal Plan
Child:				
1-2 Years	65.00	80.20	94.00	114.00
3-5 Years	70.60	88.00	108.80	130.40
6-8 Years	87.50	117.00	145.60	169.40
9-11 Years	104.00	132.60	169.40	196.30
Male:				
12-14 Years	107.90	149.90	185.50	218.40
15-19 Years	110.90	154.30	192.40	222.30
20-50 Years	119.60	153.80	192.00	232.70
51+ Years	107.90	146.90	180.70	217.10
Female:				
12-19 Years	107.00	129.10	156.40	189.40
20-50 Years	107.90	134.80	164.20	210.60
51+ Years	105.70	130.40	162.50	194.60
Family of 2:				
20-50 Years	250.30	317.50	391.80	487.60
51+ Years	235.00	305.00	377.50	452.90
Family of 4:				
Couple, 20-50 years and children-				
1-2 and 3-5 years	363.10	456.80	559.00	687.70
6-8 and 9-11 years	419.00	538.20	671.20	809.00

Table IV.8. Official USDA Food Plans: Cost of Food at Home at Four Levels, U.S. Average, June 1998.

Family Size	Suggested Adjustment
1-person	Add 20 percent
2-person	Add 10 percent
3-person	Add 5 percent
5- or 6-person	Subtract 5 percent
7- (or more) person	Subtract 10 percent

Table IV.9. Summary of Suggested Adjustments for Other Family Sizes.

To evaluate the potential costs further, the following assumptions were used:

- The USDA Plan accurately reflects what active-duty personnel expenditures at commercial supermarkets would be if commissaries were not available.
- The average family size of all active-duty personnel is between one and six people.
- The average cost for a given family size is reasonably estimated based on the average of the best case (one child per age group starting with 1-2 years) and worst case (one child per age group starting with 9-11 years) family compositions.
- The 20-50 year group will be used for all calculations.
- The Liberal-Cost Plan presented by USDA is not acceptable for consideration.

The resultant costs based on these assumptions are provided in Table IV.10.

Family Size	MONTHLY COST		
	Thrifty Plan	Low-Cost Plan	Moderate Plan
1-person	113.80	144.30	178.10
2-person	250.30	317.50	391.80
3-person	327.60	414.80	512.30
4-person	391.10	497.50	615.20
5-person	466.60	570.00	705.20
6-person	558.90	706.00	872.70

Table IV.10. Average Monthly Cost Based on Family Size.

4. Estimated Subsidization Costs per Family

The cost to DoD will depend on the percentage discount commercial supermarkets will absorb. Commissaries offer a

twenty percent discount compared to commercial supermarkets. Most likely, DoD would be required to subsidize some portion or this entire discount.

The range of potential monthly costs per person, assuming the government's subsidy is between ten and twenty percent for all products purchased, can be estimated using the information in Table IV.10. These results are summarized in Table IV.11.

Family Size	Thrifty Plan		Low-Cost Plan		Moderate Plan	
	10%	20%	10%	20%	10%	20%
1-person	11.40	22.80	14.40	28.80	17.80	35.60
2-person	25.00	50.00	31.80	63.50	39.20	78.40
3-person	32.80	65.50	41.50	83.00	51.20	102.50
4-person	39.10	78.20	49.80	99.50	61.50	123.00
5-person	46.70	93.30	57.00	114.00	70.50	141.00
6-person	55.90	111.80	70.60	141.20	87.30	174.50

Table IV.11. Summary of Potential Monthly Subsidy Costs.

5. Potential Annual Subsidy Costs, Assuming Government Subsidizes a Twenty Percent Discount

Using these results, the government's potential cost to provide a twenty percent subsidy for active-duty personnel grocery purchases can be determined. These scenarios are estimated using:

- a best case scenario (assuming all active-duty families include one person).
- a worst case scenario (assuming all active-duty families include six people).

- an expected value using the Bureau of Labor Statistics value of 2.6 people for the average family. [Ref.12:p.1]

The Bureau of Labor Statistics value for the average family size was chosen because it is more conservative than the average active-duty family size over the last three years from data collected by the Directorate for Information Operations and Reports (DIOR). Table IV.12 provides the average family size for active-duty personnel over the last three years. [Ref.11]

Year	1995	1996	1997
Average Family Size	2.30	1.88	2.53

Table IV.12. Average Family Size of Active-Duty Personnel, 1995-97.

The expected value costs, based on 2.6 representing the average family size, were calculated by taking a weighted average; the potential subsidy cost for a two-person family was weighted by a factor of 0.4 and the cost for a three-person family was weighted by a factor of 0.6. The results of these calculations are summarized in Table IV.13.

SCENARIO	Thrifty Plan	Low-Cost Plan	Moderate Plan
Best Case	\$314.6 million	\$397.4 million	\$491.3 million
Expected Value	\$818.3 million	\$1037.8 million	\$1281.5 million
Worst Case	\$1542.8 million	\$1948.6 million	\$2408.1 million

Table IV.13. Potential Annual Subsidy Costs at Twenty Percent.

The value from the Best Case scenario exceeds the current commissary funding attributable to active-duty personnel (\$225 million). Therefore, it appears that it would be too costly for the government to subsidize a full twenty percent discount for all of the eligible service-members.

6. Potential Subsidy Costs, Assuming Government Subsidizes a Ten Percent Discount

Since subsidizing the full twenty percent discount appears to be infeasible, the potential costs of subsidizing a ten percent discount will be examined. The calculations were made as before. The results of these calculations are summarized in Table IV.14. These values are closer to the funding available, but only the values from the Best Case scenario are under the \$225 million in commissary appropriations attributable to active-duty personnel in CONUS.

SCENARIO	Thrifty Plan	Low-Cost Plan	Moderate Plan
Best Case	\$157.3 million	\$198.7 million	\$245.6 million
Expected Value	\$409.6 million	\$519.2 million	\$640.3 million
Worst Case	\$771.4 million	\$974.3 million	\$1204.7 million

Table IV.14. Potential Annual Subsidy Costs at Ten Percent.

All costs were calculated assuming that DoD adopts a policy that allows the subsidy to apply to all items available at commercial supermarkets. Adopting policies to limit products, eligibility, and/or total savings would reduce the costs. Such limitations would occur under a policy of "selective subsidization". Quantifying the effects of selective subsidization depends entirely on the specifics of any selective subsidization policy adopted; and such specifics are beyond the scope of this thesis.

7. Potential Percentage that the Government Could Subsidize

The earlier analysis has shown that it appears infeasible for the government to subsidize twenty or even ten percent of the grocery purchases at commercial supermarkets. This section will determine the percentage that the government could potentially subsidize using the current commissary appropriations attributable to active duty personnel.

The potential subsidy will be determined for the average family (Expected Value) scenario along with the expected expenditures based on DeCA's sales to active-duty. The potential subsidy percentage is the expected value of annual expenditures divided into the funding available (approximately \$225 million).

If a policy is adopted allowing only active-duty personnel to purchase subsidized groceries, this would increase the funding available to \$660 million. The results are summarized in Table IV.15.

	Thrifty Plan	Low-Cost Plan	Moderate Plan	DeCA Sales
Expected Value of Annual Expenditures	\$4.09 billion	\$5.19 billion	\$6.40 billion	\$3.04 billion
Subsidy Percentage Allowable-All Eligible Patrons	5.5%	4.3%	3.5%	7.4%
Subsidy Percentage Allowable-Active-Duty Only	16.1%	12.7%	10.3%	21.7%

Table IV.15. Allowable Subsidy Percentage Based on Expected Annual Expenditures by Active-Duty Personnel.

These results imply that the government could subsidize approximately a five percent discount, if the discount was

applicable to all service-members and expenditures were at the USDA levels, before it would incur increased costs. This means that commercial supermarkets would need to absorb approximately a fifteen percent discount or more to retain the same net financial benefit for service-members. Figure 4.2 illustrates the effect average family size would have on the government's potential allowable subsidy based on providing the discount to all eligible service-members.

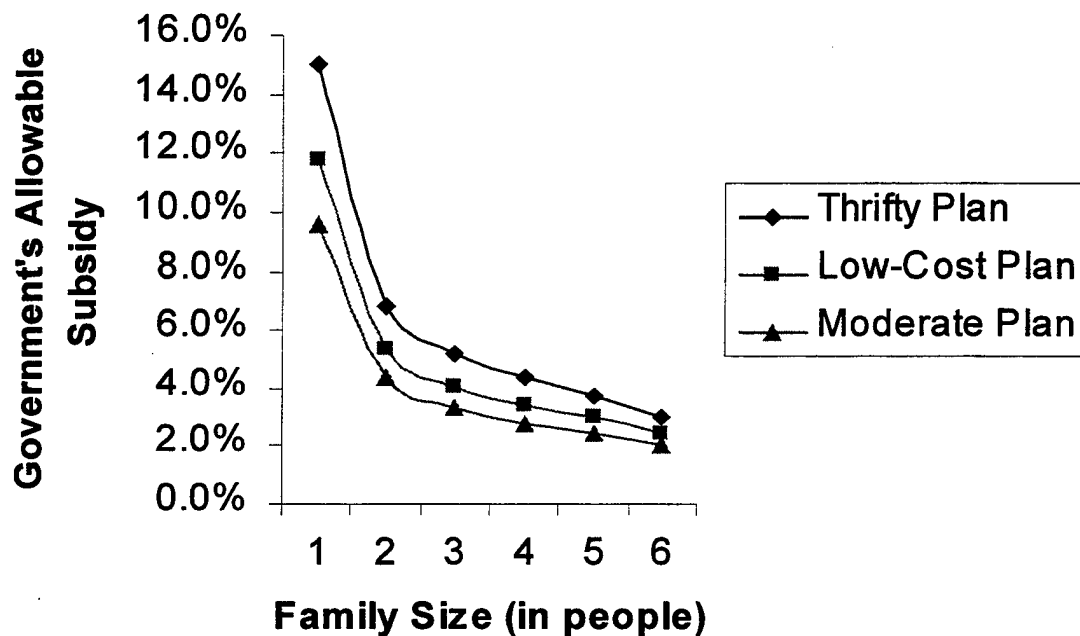


Figure 4.2. Plot of Government's Allowable Subsidy versus Family Size for All Eligible Service-Members.

However, if the discount was only available to active-duty personnel, commercial supermarkets would only need to

offer approximately a nine percent discount or less to retain the same benefits for service-members. Figure 4.3 illustrates the contrast in the government's allowable subsidy if policies are adopted to apply the discount to active-duty personnel only.

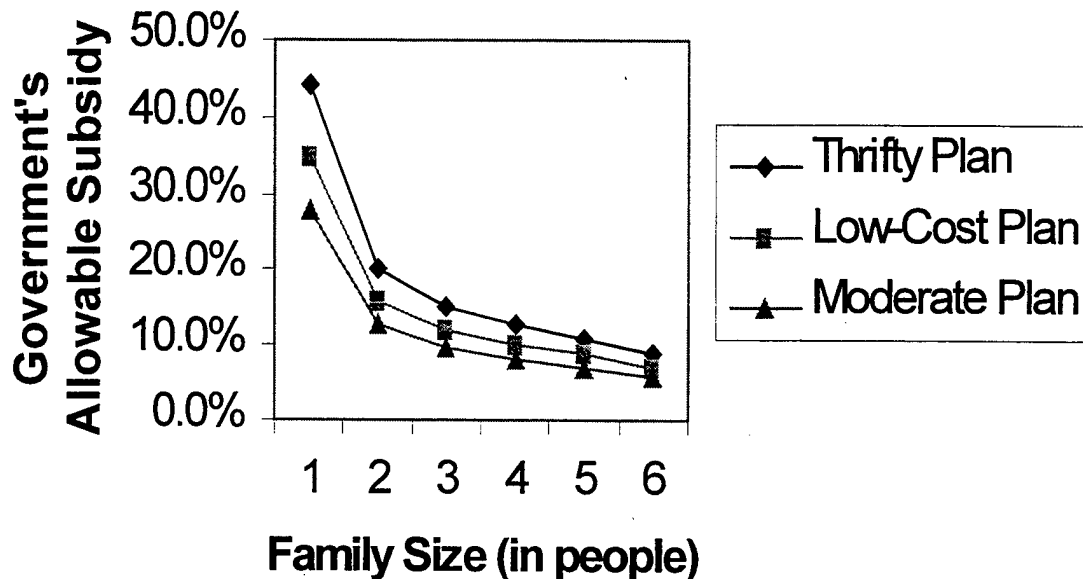


Figure 4.3. Plot of Government's Allowable Subsidy versus Family Size for Active-Duty Only.

In contrast, if the adjusted grocery expenditures based on DeCA's sales accurately reflect active-duty personnel purchasing habits at commercial supermarkets, the government could subsidize approximately a seven percent discount. This would most likely be a best case estimate, since the

expenditures do not capture the total expected expenditures for the reasons given earlier.

D. POTENTIAL TRACKING METHODS

Developing a method to provide, record, and track savings by service-member and across DoD is essential to the success of this alternative. The Pilot Project at NAS Pascagoula intended to provide these capabilities using the Navy's Smart Card.[Ref.14:p.4] However, the Navy's Smart Card is not developed yet. In the interim, the following methods were considered to provide these capabilities:

- ID cards with embedded bar code discount percentages which can be scanned at the register,
- ID coupons with similar bar code data, or
- debit or ATM cards with bar code data.

Another alternative would be to utilize the existing "Smart Card" technology available at some commercial supermarkets by outsourcing this function. The technology is already developed and it should be readily adaptable to meet DoD's needs.

1. Commercial Supermarket Technology

The grocery industry has been revolutionized since the institution of bar codes. Today's computer technology has allowed the industry to improve the service it provides. Cash registers have been replaced with sophisticated point-

of-sale terminals. These terminals are scanning systems that calculate purchase totals and track product quantities to ensure perpetual inventory. Some stores are also testing handheld scanners that allow shoppers to tally items while they shop. Many retailers use electronic benefit transfer (EBT) systems to process government benefits, including food stamps, and help combat welfare check fraud. Supermarkets also use an electronic coupon system that generates coupons based on an individual's purchases. This type of electronic information helps the store and its market researchers create a database tracking the goods a particular person purchases.

2. Commercial Supermarket Smart Card

The use of "smart cards" at supermarkets provides the customer with convenience and the store with an instant database. The use of "preferred customer" cards, at stores like Safeway and Lucky, automatically deducts "clipless coupons" from the bill. This provides the customer the convenience of not having to cut coupons to receive the savings on the goods they purchase. These "Smart Cards" also provide the customer the following information on their receipt:

- Original total purchase price
- Total savings on these items
- Total purchases this period

- Total savings this period

This information can be important to the customer. Many stores offer five or ten percent discounts along with seasonal gifts (e.g. complete Thanksgiving turkey dinners) when the customer's total purchases for a given period reaches a predetermined amount.

More importantly to the store, it provides them a database that tracks each individual's purchasing habits and automatically discounts the appropriate goods. This reduces checkout line waiting times.

E. SUMMARY

This chapter has analyzed the potential funding and costs this alternative could require. Potential policy requirements to help limit costs, such as selective subsidization, were discussed. Commercial supermarket "Smart Card" technology was also discussed. This technology provides the capabilities to administer this alternative.

Chapter V addresses potential advantages and disadvantages implementing this alternative will have over maintaining the status quo of DoD providing commissaries in CONUS. DeCA's justifications for keeping commissaries will be discussed as well.

V. ADVANTAGES AND DISADVANTAGES

This chapter examines several potential advantages and disadvantages of replacing the CONUS commissaries with discounts through commercial supermarkets. Each point will be discussed briefly. The rationale DeCA has used to justify maintaining the commissary system will also be discussed. The information provided here is not an all-inclusive list, but illustrates the constant controversy over the commissary system.

A. ADVANTAGES

1. Allows DoD to Focus More on Core Mission

DoD is attempting to reduce its infrastructure by privatizing or outsourcing functions that can be performed more efficiently by commercial sources. DoD is also trying to refocus on its core mission as a warfighting organization. This alternative would allow DoD to focus more on its core mission rather than running a chain of grocery stores in CONUS. Eliminating CONUS commissaries would reduce the current system from 298 commissaries down to approximately 100. These commissaries would only be located overseas or at isolated bases in the United States.

This shift would return the commissary system back to providing convenient and reasonably priced goods for its on-base communities where other alternatives are not readily

available. Shifting back to the commissaries' basic principle could also eliminate the constant debate over their continued operation. Few argue the necessity of the overseas commissaries where "essential" items are expensive and not readily available elsewhere.

Maintaining commissaries at isolated bases in CONUS would most likely be the most cost effective alternative for DoD in those areas. It is unlikely a commercial supermarket chain or contractor would be willing to provide their services in remote areas within the United States. The limited customer base at these locations would reduce the profitability of taking over the commissaries at these locations.

2. Accessibility and Choice

This alternative will provide increased accessibility and more choices to the eligible service-members. As discussed in Chapter III, commercial supermarkets offer extended operating hours and more conveniences. Most commissaries are normally open only six days a week for seven to eight hours a day. In contrast, commercial supermarkets are normally open seven days a week, including holidays, and between sixteen and twenty-four hours a day.

The fact that active-duty personnel are the only ones who live on military bases, while comprising a relatively small portion of the total eligible patron population, makes

off-base grocery shopping more convenient for the larger portion of eligible service-members.

Providing discounts at a variety of stores in a given area would provide eligible service-members flexibility to shop at the stores and for the brands they prefer.

B. DISADVANTAGES

1. Limits on Total Subsidization

In order to limit the government's liabilities to subsidize the savings for eligible service-members, some type of regulatory policy would have to be developed. This thesis described the concept of selective subsidization that would limit the products and amount of savings that would be allowed. Limitations on either products that can be purchased at a discount and/or the total amount service-members can save each month or year could reduce the service-members' acceptance of this alternative.

2. Fluctuating Costs

Since this alternative would provide government subsidized savings to service-members, the total costs would need to be determined prior to developing the federal budget. Even if policies were adopted to limit the total subsidy available, the costs to the government would vary as the total number of eligible service-members changed. Cost would also vary as a result of variable purchasing behavior by individuals, even within a fixed set of participants. As

time progresses and data are collected, estimation models could be developed to accurately predict potential costs.

3. Redistribution of Benefits

If limitations are placed on the total subsidy available to eligible service-members, this alternative would redistribute the benefits from service-members who purchase the majority of their groceries at the commissaries to service-members who already make their grocery purchases at commercial supermarkets. This redistribution would most likely have a larger effect on the lower income service-members, junior enlisted and retirees, as their benefits would decrease.

C. DECA'S RATIONALE

This is not the first time alternatives to the commissaries have been proposed. DeCA continues to expound the virtues and the "whys" of keeping the commissaries. The most obvious reason DeCA gives is that the overseas commissaries provide Americans stationed in foreign countries with American products at affordable prices. [Ref.15:p.5]

DeCA goes on to provide many other reasons for keeping the commissaries, including: [Ref.15:p.5]

- Commissaries are a vital part of the total compensation package necessary to maintaining an all-volunteer force.

- Commissaries encourage people to re-enlist, preserving a well trained, dedicated military.
- Commissaries encourage spouses to favor re-enlistment.
- The U.S. government cannot afford to break faith with its military retirees who were promised this form of non-pay compensation upon enlisting, especially at a time when other retiree benefits are already being eroded.
- In Congressional testimony and customer surveys, enlisted families have said repeatedly that the commissaries, stateside as well as overseas, are essential to morale, especially when a change of duty station necessitates a family move.

Each of the reasons presented by DeCA has a ring of truth to it, depending upon your viewpoint. It must be understood that it is not in DeCA's interest to voluntarily admit there is an acceptable alternative to the commissaries. The benefits of the overseas commissaries are not disputed here; however, DeCA's other justifications can be rebutted fairly easily.

In regards to preserving the compensation package, encouraging re-enlistment, and maintaining morale, the essential factor likely is discounted groceries, not the commissary in particular. DeCA bases these justifications on survey responses and Congressional testimony. However, the wording of the questions is instrumental in the way they are answered. As long as the service-members perceive they are receiving the same benefit, whether via the commissary or

via discounts at commercial supermarkets, they should be indifferent between commissaries and the alternative described in this thesis.

As far as breaking faith with retirees, the alternative of purchasing goods at commercial stores at a discount would provide them more convenience and flexibility. The added convenience of greater accessibility and product selection available at commercial supermarkets, compared to the commissaries, may justify a lower discount. To realize the commissary's benefits, retirees are forced to live near military bases or take periodic long trips to the commissary. Providing these discounts at a variety of stores, especially supermarket chains, would provide the retiree a larger selection of goods and the increased convenience of accessibility, location and operating hours.

Of course this all depends on the supermarket discount program's ability to provide the same utility as the commissaries at a savings to the government.

D. SUMMARY

This chapter considered several advantages and disadvantages of the proposed alternative. The reasons DeCA gives for keeping the commissaries and counterpoints were discussed.

Chapter VI will provide conclusions and recommendations from this research. Areas requiring further research will be discussed.

VI. CONCLUSION

Chapter IV examined the available funding and potential costs if the government subsidized discounts at commercial supermarkets. This chapter will look back at the original thesis objectives to provide recommendations from this research. Areas requiring further research will also be discussed.

A. OBJECTIVE

This thesis evaluated the feasibility of the government subsidizing commercial supermarkets to provide discounts to eligible service-members. This was accomplished by the following methods:

- Examining the willingness of commercial supermarkets to offer this type of service.

The pilot project at the Naval Station Pascagoula was used to establish that, given certain circumstances, commercial supermarkets would be willing to provide service-members discounts. Although the amount of the discount in the pilot project was only five or six percent, these stores required no subsidy from the government.

- Evaluating the applicability of current "Smart Card" technology in use at commercial supermarkets.

The pilot project at the Naval Station Pascagoula envisioned using the Navy's Smart Card as the means to administer their program. The Navy's Smart Card is not in place as of yet; however, commercial supermarkets, such as Lucky and Safeway, already employ "preferred customer" cards which utilize the necessary technology to administer this type of program. DoD should evaluate outsourcing this function to the "Smart Card" systems already in use as an alternative to developing its own.

- Analyzing methods to control the amount of subsidization.

To control or limit potential subsidization costs, DoD could use policies such as selective subsidization or reduced discounts at commercial supermarkets. Neither alternative would be appealing to the service-members that currently use the commissaries; however, these limits may be necessary to prevent excessive government subsidies, especially due to the increased benefit this alternative would provide service-members who do not currently utilize commissaries for their grocery purchases.

- Comparing estimated costs to current appropriations.

The potential costs were estimated utilizing the USDA's data on the cost of food at home as of June 1998. These data

were evaluated using a worst, most likely, and best case scenario approach. The portion of the current appropriations that supports CONUS commissaries was estimated using values presented in the CBO Report. This estimated portion was used to determine the maximum amount of subsidization the government could provide for this alternative.

Using the results of these analyses and USDA food plans, it was determined that the government could subsidize approximately three to five percent of the discount for all eligible service-members without increasing funding. However, if DoD adopted a policy to limit the discount to active-duty personnel only, the government could subsidize between ten and sixteen percent, based on USDA data.

In contrast, if providing a discount at commercial supermarkets does not change active-duty personnel spending habits, based on current DeCA sales figures the government could subsidize approximately seven percent discount for all eligible service-members. If this discount was limited to active-duty personnel only, the government could subsidize a twenty-one percent discount.

B. RECOMMENDATIONS

OMB Circular Number A-76 states,

In the process of governing, the Government should not compete with its citizens. The competitive enterprise system, characterized by individual freedom and initiative, is the primary source of national economic strength. In recognition of this principle, it has been and continues to be the general policy of the Government to rely on commercial sources to supply the products and services the Government needs.

America's National Security Strategy echoes this message by stating,

DoD should concentrate on its core missions, outsourcing activities that can be performed more efficiently in the private sector, and reengineer support activities that remain in the government.

Faced with limited budgetary resources, DoD should make every attempt to reduce its costs by reducing its infrastructure. DoD can achieve this reduction in infrastructure by focusing on its core mission. Eliminating the infrastructure necessary to operate CONUS commissaries would be a step in that direction.

To make this alternative more appealing, it is necessary to minimize the government's subsidization requirements. One method to accomplish this is via contract negotiations. Another method would be to reduce the size of the discount necessary to provide the same benefit by increasing the range of products that could be purchased at a discount.

The growth of the commercial grocery industry along with advances in technology makes it convenient and possible for authorized commissary patrons to purchase their goods at the local supermarket and have a predetermined discount deducted from their purchase.

C. AREAS FOR FURTHER RESEARCH

This thesis was only intended to evaluate the feasibility of this alternative based on a broad scope approach. Further detailed analysis in the following areas would be required to substantiate this alternative:

- determining more precisely the savings (costs not incurred) by eliminating DeCA's CONUS commissaries while maintaining commissaries at isolated bases and overseas.
- quantifying (in dollars) the utility commissaries provide eligible service-members.
- determining the actual savings commissaries provide service-members when compared to commercial supermarkets.
- determining the percent savings supermarkets would have to offer to maintain service-members' utility.
- determining the cost of contracting with grocery stores throughout the country to provide this service.
- determining the percent savings supermarkets would provide without requiring recourse from the government.
- determining the effect on cost of including all eligible service-members.
- determining the cost and utility of alternative selective subsidization policies.

All of these areas would need further research to determine if this alternative could provide the best service at the best price for eligible service-members. The commissary's benefit is a high-value quality-of-life issue. Any changes to the current system would require thorough analysis to ensure that the utility commissaries provide is maintained, while reducing the costs to the taxpayers.

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